

1 **ABSTRACT OF THE DISCLOSURE**

2 An uninterruptible power supply (UPS) system and control method
3 thereof is provided. The system contains a plurality of UPS modules connected in
4 parallel, and each module is equipped with full uninterruptible power supply
5 capabilities, and redundant control logic and functional capabilities for self-
6 initiated role detection, master arbitration and parallel processing. The UPS
7 system is self-initialized through a master arbitration process to elect a virtual
8 master among the peers for maintaining inter-unit signaling between parallel
9 UPS modules and controlling the parallel operation. If the virtual master is failed,
10 other UPS modules will initiate the role detection and master arbitration to re-
11 elect a new virtual master. Parallel operation is accomplished without any
12 external controller; the system can be operated with only one UPS module;
13 distribution of adequate resource to each module is properly arranged, thus the
14 risks of system-level single-point failure are much reduced.